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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/756,875	01/13/2004	Loyal M. Johnson JR.	Phelps US-28	3420

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EXAMINER

PAK, JOHN D

ART UNIT	PAPER NUMBER
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1616

DATE MAILED: 07/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/756,875

Applicant(s)

JOHNSON ET AL.

Examiner

JOHN PAK

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-49 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-49 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/10/2004</u> . | 6) <input type="checkbox"/> Other: ____ |

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Claims 1-49 are pending in this application.

Applicant is advised of a typographical error in claim 43, line 2, "o0.005%".

Applicant may also wish to delete in specification page 12, "[Add additional examples here]".

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 49 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 49 requires a supply of "Armstrong Excelon floor wax." There are two problems with this. First, the term, or at least a part of the term, appears to be a trademark. A trademark designates the source of a substance, not the substance itself. Second, even if the trademark issue is not dispositive of the indefiniteness issue, there is insufficient information as to what exactly is in "Armstrong Excelon floor wax." One skilled in the art would not be able to determine the metes and bounds of this claim without knowing the exact ingredient and percentage content of "Armstrong Excelon floor wax." Moreover, the manufacturer is not bound to maintain the exact present-day formulation recipe for a given product; therefore, requiring in a patent claim the use of a specific commercial product by name leaves the claim open to future variability and uncertainty should the manufacturer change the formulation, or even worse, if/when the

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manufacturer goes out of business or stops selling the product. Therefore, claim 49 is unclear and indefinite.

Claim 49 will not be further examined on the merits because its metes and bounds cannot be determined.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5, 10-12, 17-22, 27-29, 34-43 are rejected under 35 U.S.C. 102(b) as being anticipated by Yanagihara et al. (JP 2000-169717).

Yanagihara et al. explicitly disclose an antimicrobial wax that is made by dispersing in a wax 0.1 to 10 wt% of an antimicrobial silver particle¹. See the JPAB abstract; see also translation of claims 1, 4-8, 11 and paragraphs 13-16. The silver particle itself is less than 4 nm in size, and this particle is incorporated into a carrier particle of average particle size 5 to 500 nm.

The cited prior art reference therefore expressly discloses every element of the claimed invention. Certain of the claim features are discussed below.

¹ The full document is being cited here. An English abstract, JPAB 02000169717, and machine translation are provided herewith.

Dispersion of wax and particles of silver in antimicrobially effective amount

A wax and silver particles are taught to be combined. This would necessarily be a dispersion since the wax would contain the silver in a dispersive physical state. The cited reference explicitly teaches a persistent strong antimicrobial power, so “antimicrobially effective amount” is met. See the JPAB abstract, first sentence, and translation of paragraphs 1, 12, 18.

Particles of silver have a size between 5 to 100 nm

The carrier average particle size is 5-500 nm. This clearly discloses at least 5 nm carrier size, which would in turn disclose the minimum silver-carrying particle size. The claim feature is thereby met.

Weight limitations of claims 3-5, 10-12, 20-22, 27-29, 34-37, 41-43

The weight amount of the antimicrobial silver particles is disclosed to be 0.1 to 10%. With 0.1 wt% silver then being explicitly disclosed, all of the claimed weight features are met.

Claim 17: “particles of silver are available to be ionized in an amount sufficient to kill bacteria”

The silver particles are present in the prior art wax composition. Whatever is meant by “ionized,” for example, released as ions or somehow externally acted upon to ionize the silver, the silver is certainly “available” in the prior art wax composition.

Claim 18: about 99% bacteria kill within 24 hours of application

Claim 18 requires no upper limit on the amount of silver. With the prior art teaching up to 10 wt% silver, such rate of bacterial kill would necessarily have been present in the prior art wax composition.

For these reasons, all rejected claims are anticipated.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6-9, 13-16, 18, 23-26, 30-33 and 44-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagihara et al. in view of Grier.

Yanagihara et al. explicitly disclose an antimicrobial wax that is made by dispersing in a wax 0.1 to 10 wt% of an antimicrobial silver particle². See the JPAB abstract; see also translation of claims 1, 4-8, 11 and paragraphs 13-16. The silver particle itself is less than 4 nm in size, and this particle is incorporated into a carrier particle of average particle size 5 to 500 nm. Persistent strong antimicrobial power is

² The full document is being cited here. An English abstract, JPAB 02000169717, and machine translation are provided herewith.

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disclosed. See the JPAB abstract, first sentence, and translation of paragraphs 1, 12, 18.

The article by Grier is cited to establish the well known, broad-spectrum antimicrobial activity of silver and silver compounds (see pages 375-387). Treated filter elements reduce bacterial counts of water from 500,000 E. coli per ml to zero within a few hours and silver deposit effective concentration is 0.006 to 0.5 ppm (page 377, first paragraph under "Activity"). Table 18-2 discloses a 60 minute bacterial kill rate for a 0.1 wt/v% solution of silver nitrate that is higher than 99% (page 378).

The difference between the claimed invention and the cited references are as follows.

Every claim here except for claim 18 is directed to an "average spacing" feature. Yanagihara et al. does not disclose any average spacing feature. Neither does Grier. However, the Examiner still finds that the feature and the claimed invention as a whole would have been obvious to the ordinary skilled artisan.

The ordinary skilled artisan is taught from the prior art that silver is an excellent antimicrobial and bactericide. Yanagihara et al. teach a carrier size of 5-500 nm, silver particle size of less than 4 nm, and silver content of 0.1-10 wt%. Applicant's feature, average spacing, is no more than a function of the number of silver particles per given volume in a homogeneously mixed system. Hence, the various spacing permutations set forth in the claims such as (i) less than 1 μm , (ii) 0.5-3 μm , (iii) less than 3 μm , and

(iv) greater than 0.5 μm are simply alternative ways of describing weight percentage of silver-containing particles per unit volume. It is the Examiner's position that given silver's well known antimicrobial activity against a myriad microbial pathogens, one having ordinary skill in the art would have been motivated to arrive at effective antimicrobial concentrations of Yanagihara's silver-incorporated particles that suits the target application situation. Given the broad range of Yanagihara's silver concentration (0.1-10 wt%) and silver-incorporated particles (5-500 nm + no more than 4 nm), the average spacing as claimed in applicant's claims would have been obtained from the concomitant selection of those parameters in order to produce an effective silver-containing antimicrobial wax.

The Examiner's position is supported by applicant's examples. In all of applicant's examples, 30 nm average particle size and 0.005 to 0.246 wt% were used to achieve the invention examples (Examples 1-10, specification pages 6-11). Further, in paragraph [13] it is disclosed that 60 nm silver particles at 0.185 wt/v% provided 1 μm average spacing and 30 nm silver particles at 0.025 wt% provided 1 μm average spacing, as well as "about 5 nanometers to about 100 nanometers will also be effective in at least the weight percentages such as are disclosed herein."

Therefore, applicant's specification examples are evidence that the Examiner's reasoning given above is accurate: selection of Yanagihara's silver concentration and silver-incorporated particle size from the motivation of antimicrobial efficacy would have

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naturally led to the instant average spacing feature, because such feature is no more than an alternative way of expressing the concentration of the silver particles in the wax.

With respect to the feature of claim 18, it is noted that claim 18 was previously rejected as being anticipated over Yanagihara et al. Claim 18 is included here in an alternative ground of rejection. In the alternative interpretation that Yanagihara et al. do not expressly or necessarily disclose the claimed bacterial kill rate of about 99% within 24 hours, Grier is cited to establish that one having ordinary skill in the art would have been quite capable of obtaining about 99% kill rate within 24 hours by using silver (see above cited parts in Grier). Motivation to do so comes from the expected benefit of obtaining high rate of bacterial elimination within a day after application.

Therefore, the claimed invention, as a whole, would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made, because every element of the invention and the claimed invention as a whole have been fairly disclosed or suggested by the teachings of the cited references.

For these reasons, all claims must be rejected.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to JOHN PAK whose telephone number is (571)272-0620. The Examiner can normally be reached on Monday to Friday from 8 AM to 4:30 PM.

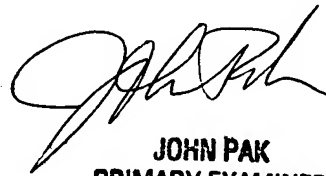
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If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's SPE, Gary Kunz, can be reached on **(571)272-0887**.

The fax phone number for the organization where this application or proceeding is assigned is **(571)273-8300**.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571)272-1600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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